

ITEM #0950043A - WETLAND GRASS ESTABLISHMENT

Description: The work included in this item shall consist of providing an accepted stand of established wetland grasses by furnishing and placing seed as shown on the plans, permits, or as directed by the Environmental Scientist from the Connecticut Department of Transportation's Office of Environmental Planning within the Wetland Mitigation Areas or other areas when required.

Materials: All approved seed mixtures shall be obtained in sufficient quantities to meet the pure live seed (PLS) application rates as determined by the seed analysis of the mixture. Application of fertilizer will be directed by the Environmental Scientist based on a soil analysis of the wetland area to be seeded. The following mixes shall be used for this item.

Wetland Seed Mixes: In order to preserve and enhance the diversity of native wetland species, it is necessary that the source for wetland seed mixtures for use in wetland mitigation areas shall be locally obtained within the Northeast USA including New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland. Two approved seed mixtures are detailed below. Other proposed mixtures must be submitted and approved by the Environmental Scientist prior to use. The materials certification for any proposed mixture that is different from that described below must be submitted a minimum of ten (10) days prior to delivery on site. This certification must match both the previously approved substitute mixture and the seed tags on the bags that are to be removed upon delivery. No seeding shall occur if all three items do not match.

Wetland Seed Mixture: (NEWP) New England WetMix, New England Wetland Plants, Inc. 800 Main Street Amherst, MA 01002, or equal. Rate shall be 1 pound (.45kg) PLS per 2500 sq.ft. (232 sq.m.)

scientific name

Alisma plantago-aquatica
Aster umbellatus
Bidens cernua
Carex comosa
Carex crinita
Carex lupulina
Carex lurida
Carex vulpinoides
Eupatorium maculatum
Eupatorium perfoliatum
Juncus effusus
Penthorum sedoides
Scirpus acutus
Scirpus atrovirens
Scirpus cyperinus
Solidago graminifolia
Verbena hastata

common name

Water plantain
 Flat-top Aster
 Nodding Bur Marigold
 Bearded sedge
 Fringed sedge
 Hop sedge
 Lurid sedge
 Fox sedge
 Spotted Joe-pye weed
 Boneset
 Soft rush
 Ditch Stonecrop
 Hard-stem bulrush
 Green bulrush
 Wool grass
 Grass-leaved goldenrod
 Blue vervain

Wetland Seed Mixture: (BRN) Wetland Seed Mix, Blackledge River Nursery, 155 Jerry Daniels Road, Marlborough, CT, 06447, or equal. Rate shall be 1 pound (.45kg) PLS per 2500 sq.ft. (232 sq.m.)

scientific name**common name**

<i>Alisma plantago-aquatica</i>	Water Plantain
<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Aster novae-angliae</i>	New England Aster
<i>Carex comosa</i>	Bristly Sedge
<i>Carex crinita</i>	Fringed Sedge
<i>Carex intumescens</i>	Bladder Sedge
<i>Carex lupulina</i>	Hop Sedge
<i>Carex lurida</i>	Lurid Sedge
<i>Carex scoparia</i>	Broom Sedge
<i>Carex stricta</i>	Tussock Sedge
<i>Carex tribuloides</i>	Blunt Broom Sedge
<i>Carex vesicaria</i>	Inflated Sedge
<i>Carex vulpinoidea</i>	Fox Sedge
<i>Eupatoriadelphus maculatus</i>	Joe Pye Weed
<i>Eupatorium perfoliatum</i>	Boneset
<i>Glyceria canadensis</i>	Canada Manna Grass
<i>Glyceria striata</i>	Fowl Mannagrass
<i>Hibiscus moscheutos</i>	Rose-mallow
<i>Iris versicolor</i>	Blue flag iris
<i>Juncus acuminatus</i>	Sharp-fruited Rush
<i>Juncus brevicaudatus</i>	Narrow-panniced Rush
<i>Juncus canadensis</i>	Canada Rush
<i>Juncus effusus</i>	Soft Rush
<i>Lobelia cardinalis</i>	Cardinal Flower
<i>Lysimachia terrestris</i>	Swamp Candle
<i>Mimulus ringens</i>	Monkey Flower
<i>Rhynchospora capitellata</i>	Brownish Beak Rush
<i>Sagittaria latifolia</i>	Broad-leaved Arrowhead
<i>Scirpus atrovirens</i>	Green Bulrush
<i>Scirpus cyperinus</i>	Wool Grass
<i>Scirpus expansus</i>	Woodland Bulrush
<i>Scirpus hattorianus</i>	Green Bulrush
<i>Scirpus validus</i>	Soft-stem Bulrush
<i>Spirea tomentosa</i>	Steeplebush
<i>Triadenum virginicum</i>	Marsh St. John's Wort
<i>Verbena hastata</i>	Blue Vervain

Construction Methods: Construction methods shall be those established as agronomically acceptable and feasible and which the Environmental Scientist approves. Seeding shall occur during the fall season immediately following construction of the wetland site. Fall seeding must occur from August 15th to October 15th. Seeding shall be applied to all areas that will not be continuously inundated constructed wetland areas. The total area of constructed wetland shall determine the amount of seed to be spread based on 1 pound (.45 kg) PLS per 2500 square feet (232 sq.m.). If seed is purchased in bulk rather than by PLS, the rate of application must be adjusted to meet the required PLS seeding rate. This seeding rate shall be increased by the appropriate percentage as determined by the following formula based off of the information provided on the seed tags at delivery.

$(\text{Germination Percentage} \times \text{Purity Percentage}) / 100 = \text{Percentage PLS}$

The Engineer shall verify that the seed is applied at a rate that will allow for 100 percent PLS.

Method of Measurement: This work will be measured for payment by the number of square feet (square meters) of surface area of accepted established wetland plants as specified or by the number of square feet (square meters) surface area of seeding actually covered as specified.

Basis of Payment: This work will be paid for at the contract unit price per square foot (square meter) for "Wetland Grass Establishment," which price shall include all materials maintenance, equipment, tools, labor, and work incidental thereto. Partial payment of up to 50% may be made for work completed, but not accepted. Full payment shall not be made until the area has been accepted by the Environmental Scientist.

Pay Item

Pay Unit

Wetland Grass Establishment

Sq.ft. (Sq.m.)